



May 28, 2014

Shell Oil Products US

Puget Sound Refinery

P.O. Box 622

Anacortes, WA 98221

Tel 360.293.0800

Fax 360.293.0808

Email pugetsound@ShellOPUS.com

Web-Plant www.shellpugetsoundrefinery.com

Web-Corporate www.shellus.com

Director, Air Enforcement Division
Office of Regulatory Enforcement
U.S. Environmental Protection Agency, Mail Code 2242-A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

Subject: *United States v Equilon Enterprises, LLC*
Civil Action Number H-01-0978
Southern District of Texas entered August 21, 2001

Flaring Incident Report – April 30, 2014
Shell Oil Products US, Puget Sound Refinery

Dear Sir or Madam:

Pursuant to Section VIII, Paragraph 136 of the consent decree in *United States v Equilon Enterprises LLC*, Civil Action Number H-01-0978, entered August 21, 2001 by the United States District Court for the Southern District of Texas, Shell Oil Products US submits the following information regarding a Hydrocarbon Flaring Incident, as defined in Paragraph 120(f), that occurred at the Puget Sound Refinery. The incident was investigated and a detailed report listing the root causes is included in the attached Incident Report.

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and that I have made a diligent inquiry of those individuals immediately responsible for obtaining the information and that to the best of my knowledge and belief, the information submitted herewith is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

If you have any comments or questions regarding this information, please contact Tim Figgie at (360) 293-1525.

Sincerely,

Thomas J. Rizzo
General Manager

Enclosure

PSR0000635

cc (w/enclosures):

Director, Air Enforcement Division
U.S. Environmental Protection Agency
c/o Matrix Environmental & Geotechnical Services
Matrix New World Engineering, Inc.
26 Columbia Turnpike
Florham Park, NJ
East Hanover, NJ 07936

Director
NWCAA
1600 South 2nd Street
Mount Vernon, WA 98273

John Keenan
Office of Air Quality (OAQ-107)
US EPA – Region 10
1200 Sixth Avenue
Seattle, WA 98101

Email PDF to:
'dykes.teresa@epa.gov';
'csullivan@matrixnewworld.com'

PSR0000636

FLARING INCIDENT REPORT

Type of Incident: ☐ Acid Gas / SWSG ☐ Tail Gas ☒ Hydrocarbon

Brief Description of Incident:

On April 30, 2014 at approximately 1pm high H2S readings occurred in the flare when the wet gas compressor (WGC) tripped, followed by a trip of the FCC Unit. The WGC tripped when the absorber tower charge pump 4BG30 tripped out and the spare pump 4BG30a auto-start did not function. The loss of both absorber tower charge pumps caused high pressure in the system, which caused the WGC to trip resulting in excess flaring.

The 4BG30 pump tripped out most likely due to vibration that triggered the mechanical trip mechanism. The spare pump (4BG30a) auto-start did not activate when needed due to a malfunctioning switch. Pump 4BG30a was started up manually to allow the FCCU to restart. Pump 4BG30 was removed from service for repair and pump 4BG30a will be shutdown to repair the auto-start system after 4BG30 is brought back online.

This event resulted in flaring of more than 500 lbs of SO₂, and 3 periods of exceedance of the 162ppm H₂S 3hr rolling average limit. There was not an exceedance of the 1hr average 1000ppm SO₂ corrected to 7% excess O₂ limit.

Incident Start Date:	4/30/2014	Incident Start Time:	1:00 PM
Incident End Date:	4/30/2014	Incident End Time:	3:00 PM

Estimated Sulfur Dioxide Emissions: (Attach below):	1,255 lbs SO ₂	Pounds
SO ₂ lbs/hr = 0.995*(flare gas flow, MSCFH * 1000) * (Sulfur, vol% / 100) * (64.0648/379), where 0.995 is flare efficiency, 64 #/#-mole is the MW of SO ₂ and 379 is scf/#-mole		

Steps taken to limit the duration and/or quantity of sulfur dioxide emissions:

All Flare Gas Recovery (FGR) compressors were operating to recovery as much flare gas as possible.

ANALYSIS OF INCIDENT AND CORRECTIVE ACTIONS

No additional information attached

Primary and contributing causes of incident:

The initiating root cause of this event was a failed auto-start function on the absorber charge pump 4BG30a.

Analyses of measures available to reduce likelihood of recurrence (evaluate possible design, operational, and maintenance changes; discuss alternatives, probable effectiveness, and cost; determine if an outside consultant should be retained to assist with analyses):

The auto-start system on 4BG30a will be repaired.

Description of corrective action to be taken (include commencement and completion dates):

See above.

If correction not required, explain basis for conclusion:

See above.

The incident was the result of or resulted in the following (check all that apply):

- ☐ Error from careless operation
- ☐ Equipment failure due to failure to operate and maintain in accordance with good engineering practice
- ☒ Sulfur dioxide emissions greater than 20 #/hr continuously for three or more consecutive hours
- ☐ Caused the number of Acid Gas or Tail Gas incidents in a rolling twelve-month period to exceed five
- ☐ None of the above

Was the root cause identified as a process problem isolated within an SRP?

- ☐ Yes (An optimization study of the affected SRP is required as part of the corrective actions identified above.)
- ☒ No

The root cause of the incident was:

- ☒ Identified for the first time since March 21, 2001
- ☐ Identified as a recurrence since March 21, 2001 (explain previous incident(s) below)

Was the root cause of the incident a malfunction?

- ☐ Yes (describe below)
- ☒ No

Definition of Malfunction: *Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or failure of a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.*

REPORTING REQUIREMENTS

Submit initial report, supporting documents and assessment of stipulated penalties, if any, within 30 days of the incident to the EPA Regional Office and Northwest Clean Air Agency.

If at the time the first report is submitted (within 30 days of the incident), corrective actions have not been determined a follow-up report is required within 45 days of first report (unless otherwise approved by the EPA). Provide anticipated date of follow-up report.

Stipulated penalties do not apply to hydrocarbon flaring events.

Prepared By: Tim Figgie Date: May 28, 2014